

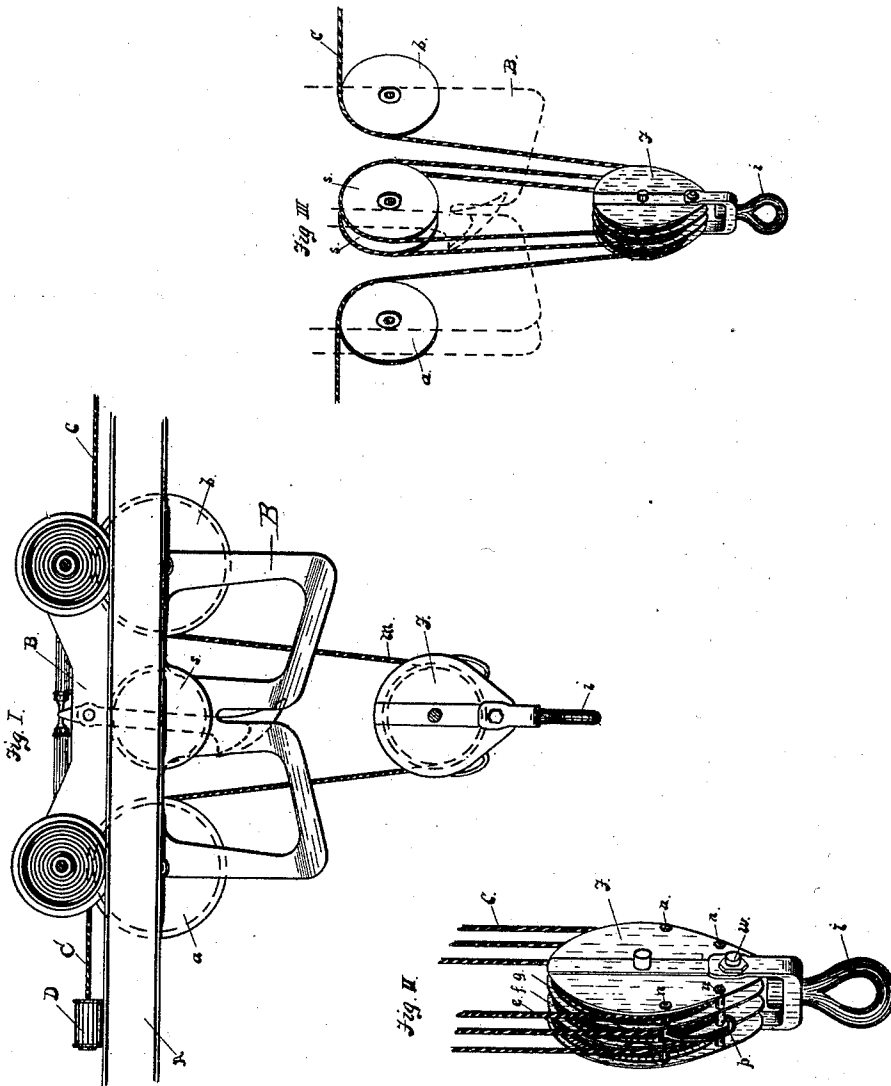
(No Model.)

A. E. BROWN.

MECHANISM FOR DOUBLING UP THE PURCHASE OF HOIST ROPES.

No. 465,775.

Patented Dec. 22, 1891.



WITNESSES,

M. E. Chilton.
A. Becker

INVENTOR.

Alex. C. Brown
J. N. McIntire
ATTORNEY.

UNITED STATES PATENT OFFICE.

ALEXANDER E. BROWN, OF CLEVELAND, OHIO.

MECHANISM FOR DOUBLING UP THE PURCHASE OF HOIST-ROPE.

SPECIFICATION forming part of Letters Patent No. 465,775, dated December 22, 1891.

Application filed July 16, 1891. Serial No. 399,738. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER E. BROWN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful
5 Device or Mechanism for the Doubling Up or Increasing of the Purchase of the Hoist-Rope of a Hoisting and Conveying Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying draw-
10 ings, forming part of this specification.

My invention relates to doubling up or increasing and diminishing the purchase of the hoist-rope on the load-carrying block in a
15 hoisting and conveying machine, and has for its object to provide means by which the desired changes or variations may be made without disconnecting the hoist-rope from either the anchorage or fixed point of attachment,
20 to which one of its ends is fastened, or from the winding-drum of the hoist-engine, to which its other end is secured.

To this main end and object my invention consists, essentially, in the use, in connection
25 with a trolley provided with supplemental rope-wheels, of a hoist-block which has a series of sheaves and is adapted to coact with the usual (two) rope-wheels of the trolley when only one of said hoist-block sheaves is in use
30 and to coact with the usual and also with the supplemental trolley rope-wheels when a series of its sheaves are in operative use, all as will be hereinafter more fully described, and as will be more particularly pointed out in the
35 claim of this specification.

To enable those skilled in the art to which my invention relates to understand and practice the same, I will now proceed to more fully describe my improved contrivance, referring
40 by letters to the accompanying drawings, which form part of this specification, and in which I have shown my said invention carried into effect in the precise form of apparatus or mechanism with which I have so far
45 practiced it, though it may of course be practiced with other forms of hoisting and conveying machines and under various modifications as to the structural details.

In the drawings, Figure 1 is a side view of
50 so much of a hoisting and conveying machine as is necessary to be shown in order to illustrate my present invention. Fig. 2 is a per-

spective view of the hoist-block detached to better show its construction with a series of sheaves. Fig. 3 is a diagrammatical perspective view showing the same parts as seen at
55 Fig. 1, but with a different arrangement of the hoist-rope.

In the several figures the same part will be found always designated by the same letter
60 of reference.

At Fig. 1 I have shown the machine with the hoist-rope adjusted or arranged so as to utilize only one of the sheaves of the hoist-block, while at Fig. 3 said rope is arranged to
65 bring into action all of the sheaves of said block, and also all the rope-wheels of the trolley, and, bearing this in mind, the following explanations will now make clear the construction and operations of the machine.

A represents part of the bridge tramway; B, the trolley, and C the hoist-rope of a
70 "Brown hoisting and conveying machine" of that species in which the hoist-rope has one end anchored to a fixed point of attachment
75 D and has the other wound on the drum of a hoist-engine, (not shown,) but having my present invention embodied therein.

The trolley B is made in about the usual approved form, except that it is provided with
80 a series of supplemental rope-wheels *s* and the hoist-block F, instead of being made, as usual in such machines, with a single sheave, has three sheaves *e*, *f*, and *g*, all mounted, of
85 course, on a common axis or spindle.

When the machine or apparatus is to be used to do the lighter kind of work, (for which it is mainly designed and for which it is supposed to be used most of the time,) the two supplemental rope-wheels *s* (which are
90 mounted with their axes in line) of the trolley are left wholly in disuse, as seen at Fig. 1, the hoist-rope passing, as shown in said figure, from the anchorage D along to and partially over one of the usual trolley-wheels
95 *a*, thence down to and partially around the middle sheave *f* of the hoist-block F, and thence up to and over the other usual trolley-wheel *b*, and with the hoist-rope thus adjusted the two outer sheaves *e* and *g* of the hoist-block
100 are, it will be understood, in a state of disuse, the single loop *m* of the hoist-rope coacting with the said block to lift the load suspended from its hook *i* in the usual manner. When,

however, it may be desired to increase the purchase of the hoist-rope C, so as to render the machine capable of lifting and handling a heavier load than usual, the hoist-block F is removed from the single loop *m* (seen at Fig. 1) of the rope C, the said loop is pulled out or lengthened, and then doubled on itself, so as to form three loops, as illustrated at Fig. 3, and then the hoist-block F is replaced, but with its three sheaves in engagement with the lower portions of the three loops of the rope, as seen in the last-named figure. Of course with the rope C thus adjusted to utilize all the rope-wheels of the trolley and all the sheaves of the hoist-block the lifting power of the hoist-rope will be three to one as compared with its purchase when adjusted as shown at Fig. 1, and it will be understood that under any mere modification of the machine which may adapt it to similar variations of the lifting power of the rope, but of different degrees, due merely to making more or less loops in the rope and having a corresponding greater or less number of trolley-wheels and block-sheaves, the machine would still involve the pith of my present invention.

If the hoist-block be constructed as shown, so as to render it necessary, the bolts *w* and those marked *n* (that secure in place the handles *p*) must of course be removed and replaced in making the shifts or changes described in order to unseat and reseat the rope-loops in the grooved peripheries of the sheaves of said block.

In another application filed simultaneously with this one, Serial No. 399,737, I have described and claimed another construction of machine, or a different means for effectuat-

ing a variation in the purchase of the hoist-rope, in which, by a transformation of the usual hoist-block into a trolley-sheave and the addition of another hoist-block, the lifting power of the rope may be multiplied. My present invention, however, relates to a machine which, it will be seen, works on a different principle, in that the trolley is permanently provided with supplemental rope-wheels, and the same hoist-block is used under all the various adjustments of the rope C to effect the changes in the lifting power exerted on the said block. My present invention should not, therefore, be confounded with that made the subject of my said other case; and

What I herein claim as new, and desire to secure by Letters Patent, is—

In a hoisting and conveying machine of that type in which the hoist-rope is looped round about the hoist-block and raises and lowers the load by a shortening up and lengthening out of the loop in the rope, the combination, with the trolley formed or provided with a supplemental set of rope-wheels, as specified, of a hoist-block having a series of sheaves, one of which coacts with the usual rope-wheels of the trolley when the hoist-rope is looped singly and the others of which coact with the said supplemental rope-wheels of the trolley when the loops of the hoist-rope have been multiplied, all substantially as and for the purposes hereinbefore set forth.

In witness whereof I have hereunto set my hand this 18th day of June, 1891.

ALEX. E. BROWN.

In presence of—

H. N. CHAMBERLAIN,
M. MILLARD.